Attachment Showing Pending Claims With Amended Matter Incorporated

IN THE CLAIMS

1. (Once Amended) A device, comprising:

a snap-action thermal switch structured in a normally open configuration; and

a discrete resistive conductor integral with the snap-action thermal switch and coupled to an output thereof, the being remote from an actuator of the thermal switch.

2. (Once Amended) The device of claim 1 wherein the resistive conductor and the snap-action thermal switch share one or more common terminals.

3. (Once Amended) The device of claim 1 wherein the snap-action thermal switch is structured having a pair of terminals being mutually electrically isolated when the snap-action thermal switch is structured in the normally open configuration; and

the integral resistive conductor is electrically coupled to provide an output on the pair of electrically isolated terminals.

4. (Once Amended) The device of claim 3 wherein the pair of mutually electrically isolated terminals are shorted together when the device senses an ambient temperature higher than a set point of the snap-action thermal switch.

5. Once Amended) The device of claim 3 wherein the integral resistive conductor is mounted on an interior surface of the snap-action thermal switch.

6. Once Amended) The device of claim 3 wherein the integral resistive conductor is mounted on an exterior surface of the snap-action thermal switch.

7. (Once Amended) A thermal sensor, comprising:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact;

an actuator positioned relative to the first electrical contact and responsive to a sensed temperature external to the switch for spacing the first movable contact away from the second contact; and

a discrete electrical resistor coupled in parallel with the first and second contacts and spaced away from the actuator.

8. The thermal sensor of claim 7 wherein the actuator further comprises a bi-metallic actuator having first and second physical states, the first state being structured to space the first movable contact away from the second contact, and the second state being structured to permit the first movable contact to contact the second contact.

9. The thermal sensor of claim 8, further comprising:

a wiring harness having the single-pole, single-throw switch with the electrical resistor electrically coupled thereto; and

a plurality of snap-action thermal switches electrically coupled in parallel with the single-pole, single-throw switch.

10. The thermal sensor of claim 9 wherein the electrical resistor is integral with the single-pole, single-throw switch.

11. The thermal sensor of claim 10 wherein each of the plurality of snap-action thermal switches electrically coupled in parallel with the single-pole, single-throw switch comprises:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact; and

an actuator positioned relative to the first electrical contact and responsive to a sensed temperature for spacing the first movable contact away from the second contact.

12. The thermal sensor of claim 11 wherein one or more of the plurality of snap-action thermal switches further comprises an electrical resistor coupled between the first and second contacts.

13. (Once Amended) A thermal sensor, comprising:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact;

an actuator positioned relative to the first electrical contact and responsive to a sensed temperature for spacing the first movable contact away from the second contact, the actuator being a bi-metallic actuator having first and second physical states, the first state being structured to space the first movable contact away from the second contact, and the second state being structured to permit the first movable contact to contact the second contact;

an electrical resistor coupled between the first and second contacts and being integral with the single-pole, single-throw switch;

a wiring harness having the single-pole, single-throw switch with the electrical resistor electrically coupled thereto;

a plurality of snap-action thermal switches electrically coupled in parallel with the single-pole, single-throw switch, each of the plurality of snap-action thermal switches comprising:

a single-pole, single-throw switch having first and second electrical contacts structured in a normally open configuration, the first contact being movable relative to the second contact, and

an actuator positioned relative to the first electrical contact and responsive to a sensed temperature for spacing the first movable contact away from the second contact, and

wherein one or more of the plurality of snap-action thermal switches further comprises an electrical resistor coupled between the first and second contacts; and

a means for determining whether each of the plurality of snap-action thermal switches is electrically coupled to the wiring harness.

14. The thermal sensor of claim 12, further comprising a means for determining for one or more of the plurality of snap-action thermal switches whether the first movable contact is spaced away from the second contact.

15. The thermal sensor of claim 12, further comprising a logic circuit structured to determine for one or more of the plurality of snap-action thermal switches whether the electrical resistor is coupled to the wiring harness.

16. The thermal sensor of claim 15, further comprising a logic circuit structured to determine for one or more of the plurality of snap-action thermal switches whether the first movable contact is spaced away from the second contact.

17. (Once Amended) A multi-terminal, snap-action thermal switch, comprising:

a first electrical contact coupled to a first terminal;

a second electrical contact coupled to a second terminal;

a thermal actuator positioned to separate the first and second electrical contacts at sensed temperatures less than a predetermined set-point temperature; and

an electrically resistive conductor coupled for constant current flow between the first terminal and an other terminal and being spaced away from the actuator.

18. (Once Amended) The switch of claim 17 wherein the other terminal is identical to the second terminal such that the electrically resistive conductor is coupled between the first terminal and the second terminal.

19. (Once Amended) The switch of claim 17 wherein the other terminal to which the electrically resistive conductor is coupled is a third terminal that is different from the second terminal.

20. (Once Amended) A three-terminal, snap-action thermal switch, comprising:

first, second and third electrical terminals mounted in a header, the first, second and third terminal being mutually spaced apart and electrically isolated;

a fixed electrical contact being positioned on the first terminal;

a movable electrical contact being positioned on the second terminal and being biased into electrical contact with the fixed electrical contact;

a bi-metallic actuator being convertible as a function of temperature between a first state wherein an actuation portion is positioned to space the movable electrical contact away from the fixed electrical contact, and a second state wherein the actuation portion is positioned to permit electrical contact between the movable electrical contact and the fixed electrical contact; and

a constantly closed electrically resistive conductor coupled between the third electrical terminal and one of the first and second electrical terminals.

21. The switch of claim 20, further comprising a housing coupled to the header and cooperating with the header to encase the fixed and movable contacts.

22. (Once Amended) The switch of claim 21 wherein the electrically resistive conductor is encased within the cooperating housing and header.

23. (Once Amended) The switch of claim 21 wherein the electrically resistive conductor is external to the cooperating housing and header.

24. (Once Amended) A method for determining electrical connections, the method comprising:

structuring a pair of electrical contacts in a normally open configuration;

electrically interconnecting an electrically resistive conductor with at least one of the pair of contacts; and

detecting a minimum electrical resistance of the electrically resistive conductor.

25. (Once Amended) The method of claim 24, wherein electrically interconnecting an electrically resistive conductor includes electrically interconnecting an electrically resistive conductor with each of the pair of contacts.

26. (Once Amended) The method of claim 24, wherein electrically interconnecting an electrically resistive conductor includes electrically interconnecting an electrically resistive conductor with one of the pair of contacts and with an electrical terminal that is electrically isolated from the pair of normally open electrical contacts.

27. (Once Amended) The method of claim 24, further comprising:

electrically interconnecting the electrically resistive conductor to an input of an electrical circuit having an output spaced away from the input; and

electrically interconnecting to the output of the electrical circuit means for operating the detecting of the minimum electrical resistance of the electrically resistive conductor.

28. (New) A thermal sensor, comprising:

a plurality of snap-action thermal switches each having first and second electrical contacts structured in a normally open configuration, each first contact being movable relative to the respective second contact, and an actuator positioned relative to each first electrical contact and responsive to different sensed temperatures for alternately positioning the respective first movable contact into contact with and spaced away from the respective second contact;

an electrical resistor coupled between the respective first and second contacts of one or more of the plurality of snap-action thermal switches;

a wiring harness having the plurality of snap-action thermal switches electrically coupled thereto in parallel; and

a means for determining whether each of the plurality of snap-action thermal switches is electrically coupled to the wiring harness.